

a' cont.  
retardance (preferably impermeability) as well as conformability to any gross topography on the print cartridge. The hot-melt is heat staked to the print cartridge 28 in the same manner as described above in connection with Figs. 3 and 4. After sealing the orifice plate 29, Fig. 6, and the TAB circuit 32, the pouch material 53 is flow wrapped around the print cartridge 28 into a pouch and heat staked. Later, when the print cartridge is to be installed in a printer, the pouch material 53 is removed from around the print cartridge 28. This removal of the pouch material also pulls the block coated hot-melt off of the orifice plate because the hot-melt does not separate from the pouch material. This construction allows for all-in-one, simultaneous pouch and nozzle seal removal.--

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In the claims:

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6. (Amended) A print cartridge with sealed nozzles, comprising:  
a print cartridge having nozzles through which ink is jetted; and  
a hot-melt layer adhesively bonded to the print cartridge and sealing the nozzles,  
wherein the hot-melt layer bonds the print cartridge to a package containing the print cartridge.

a<sup>3</sup>  
8. (Amended) A print cartridge with sealed nozzles, comprising:  
a print cartridge having nozzles through which ink is jetted; and  
a hot-melt layer adhesively bonded to the print cartridge and sealing the nozzles,  
wherein the print cartridge has electrical contacts and leads mounted thereon which are also sealed by the hot-melt.

9. (Amended) A print cartridge with sealed nozzles, comprising:  
a print cartridge having nozzles through which ink is jetted; and  
a hot-melt layer adhesively bonded to the print cartridge and sealing the nozzles,  
wherein the hot-melt is adhesively bonded to a film having an adhesion with the hot-melt that is greater than the adhesion between the hot-melt and the print cartridge.

10. (Amended) A print cartridge with sealed nozzles, comprising:  
a print cartridge having nozzles through which ink is jetted; and

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com. a hot-melt layer adhesively bonded to the print cartridge and sealing the nozzles,  
wherein the hot-melt layer is laminated with a moisture retardant base film.

sub B17 22. The laminate of claim 1, wherein the base film is a Nucrel®-coated  
polyethylene terephthalate film.

A4 23. The laminate of claim 1, wherein the base film is a Bicolor LBW film.

24. The laminate of claim 1, wherein the base film is a Tyvek® film.

#### COMMENTS

##### I. Status of claims

Claims 1-21 were pending. Claims 6, 8, 9, and 10 have been amended. Claims 22-24 have been added.

##### II. Allowed claims

Claim 9 has been rewritten in independent form in response to the Examiner's indication that such a claim is allowable.

##### III. Claim rejections under 35 U.S.C. § 102(b)

The Examiner has rejected claim 6 under 35 U.S.C. § 102(b) over Carlotta (U.S. 5,400,060). Claim 6 has been amended and now requires that the hot-melt layer bond the print cartridge to a package containing the print cartridge. Carlotta discloses a seal 28 that is in the form of a pull tab and includes a low-temperature melt material layer 32 covering the nozzles 26 of a print head die 12 and an overlying a tear resistant layer 30. Carlotta does not teach or suggest bonding the print head die 12 to a package containing the print head die 12 with the low-temperature melt material layer 32.

For at least these reasons, the Examiner's rejection of independent claim 6 U.S.C. § 102(b) over Carlotta should be withdrawn.

IV. Claim rejections under 35 U.S.C. § 103(a)

For the purpose of the following discussion, the examiner is reminded that:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not on applicants' disclosure.

MPEP § 706.02(j). Furthermore, as pointed out by the Patent Office Board of Appeals and Interferences:

The examiner should be aware that "deeming" does not discharge him from the burden of providing the requisite factual basis and establishing the requisite motivation to support a conclusion of obviousness.

Ex parte Stern, 13 USPQ2d 1379 (BPAI 1989).

A. Claims 1-3, 5, 7, 10-13, 15, and 19

The Examiner has rejected claims 1-3, 5, 7, 10-13, 15, and 19 under 35 U.S.C. § 103(a) over Carlotta.

1. Claims 1, 5, and 15

Each of claims 1, 5, and 15 requires a moisture retardant film bonded to a hot melt film. With respect to these claims, the Examiner has indicated that (original emphasis):

Carlotta further teaches the laminated seal (28) having a layer (30, figs. 2 and 3) on top of the low temperature melt layer (32), the layer (30) is made of plastic material, refer to col. 3, lines 42-44. The device of Carlotta DIFFERS from claims 1, 5, and 15 in that it does not teach:

a moisture retardant film.

Therefore it would have been an obvious matter to understand that the plastic material as taught by Carlotta is a moisture retardant material. Because the nature of plastic is not allowing moisture to infiltrate through.

Contrary to the Examiner's assertion, however, not all plastic materials are moisture retardant. For example, as indicated on the web page contained in the attached Appendix B, certain plastic materials, such as certain thin polyester laminates degrade in the presence of water due to the presence of hydrolysable ester groups in their molecular structures. In general, a plastic is an organic polymer that is available in some resin form or some form derived from a basic polymerized resin. Polyester, for example, is a thermosetting resin produced by reacting unsaturated, generally linear, alkyd resins with vinyl-type active monomer, such as styrene, methyl styrene, or diallyl phthalate, and curing through vinyl polymerization using peroxide catalysts and promoters, or heat, to accelerate the reaction.

The properties of a plastic material within a given material classification may vary over a wide range, depending on the way in which the plastic material is formed. For this reason, in order to specify a plastic material one must specify one or more properties of the plastic material in addition to specifying its material composition. With respect to the tear resistant layer 30, Carlotta teaches that:

flexible, tear-resistant film layer 30 is preferably made of a plastic material, such as polyester. Layer 30 has a higher melting temperature than layer 32. Any conventional flexible, tear resistant material could be used, including fabric or paper. (Col. 3, lines 42-46)

The only properties that Carlotta specifies for layer 30 are flexibility, tear-resistance, and relative melting temperature. Thus, one having ordinary skill in the art at the time of the invention would not have been led to select a moisture retardant film for the flexible, tear resistant film layer 30. Indeed, Carlotta's teaching that a fabric or paper may be used as the

tear resistant film layer 30 would have lead one of ordinary skill in the art at the time of the invention away from selecting a moisture retardant film.

For at least these reasons, the Examiner's rejection of claims 1, 5, and 15 under 35 U.S.C. § 103(a) over Carlotta should be withdrawn.

2. Claim 2

Claim 2 incorporates that features of independent claim 1 and, therefore is patentable for at least the same reasons explained above. Claim 2 also is patentable for the following addition reason.

The Examiner has acknowledged that Carlotta fails to teach that layer 30 is a polyolefin. The Examiner, however, has asserted that:

Therefore it would have been obvious to a person having skill in the art at the time the invention was made to select a known material available to the general public, since it has been held to be within the general skill of a worker in the art to select a known material such as polyolefin which is known as a product of Porex company on the basis of its suitability for the intended use for the purpose of using its plastic nature that in one respect is moisture retardant, refer to MPEP 2144.07.

The Examiner has failed to provide the requisite factual basis and failed to establish the requisite motivation to support his deemed conclusion that the feature recited in claim 2 would have been obvious to one of ordinary skill in the art at the time of the invention. The Examiner merely asserts without any basis that the feature recited in claim 2 is an obvious matter of design choice. The Examiner is requested to cite other art in support of his assertions. Alternatively, if the Examiner is aware of facts within his personal knowledge that provide the requisite factual basis and establishes the requisite motivation to support his deemed conclusion that the feature recited in claim 2 would have been obvious, the Examiner is requested to provide an affidavit in accordance with 37 CFR § 1.104(d)(2). Otherwise, the Examiner's rejection of claim 2 should be withdrawn.

In addition, it appears that the Examiner has improperly engaged in hindsight reconstruction of the claimed invention, using applicants' disclosure as a blueprint for piecing together prior art to defeat patentability. Indeed, there is no teaching or suggestion in

Carlotta that the tear resistant film layer 30 should be moisture retardant, much less be made from a moisture retardant polyolefin film. Without a proper explanation for combining these references based on Carlotta's disclosure, the Examiner has failed to establish a proper *prima facie* case for obviousness and the rejection should be withdrawn.

3. Claim 3

Claim 3 incorporates the features of independent claim 1 and therefore is patentable for at least the same reasons explained above.

4. Claim 7

Claim 7 incorporates the features of independent claim 6 and therefore is patentable for at least the same reasons explained above.

5. Claim 10

Claim 10 requires a moisture retardant film laminated a hot melt film and therefore is patentable for at least the same reasons explained above in connection with claims 1, 5, and 15.

6. Claim 11-13 and 19

Claims 11-13 incorporate that features of independent claim 6 and therefore are patentable for at least the same reasons explained above.

Claim 19 incorporates the features of independent claim 18 and therefore requires heat staking a moisture retardant layer of material over a hot melt layer. Carlotta does not teach or suggest such a feature, as explained above in connection with claims 1, 5, and 15.

B. Claims 4, 8, 14, 16, 17, 20, and 21

Dependent claim 4 incorporate the features of independent claim 1, dependent claims 8 and 14 incorporate the features of independent claim 6, and dependent claim 17 incorporates the features of independent claim 15. Therefore, these claims are patentable for at least the same reasons explained above.

The Examiner has rejected claims 4, 8, 14, 16, 17, 20, and 21 over Carlotta in view of Karita (U.S. 5,850,238). The Examiner has acknowledged that Carlotta does not teach or suggest a laminate that seals electrical contacts and leads on print cartridges. The Examiner, however, has indicated that:

Karita et al. teach a print head is sealed by a sealing member (3, fig. 18) that seals not only ejection outlets but also protects electrical contacts and leads, refer to col. 15, lines 23-45.

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the device of Carlotta to extend Carlotta's laminated seal to also seal the electric contacts as taught by Karita et al. for the purpose of protecting the electric contacts.

Contrary to the Examiner's assertion, Karita's teaching would not have motivated one of ordinary skill in the art at the time of the invention to extend Carlotta's laminated seal to seal electric contacts. According to Karita:

FIG. 18 shows a further embodiment, wherein the sealing member 3 seals not only the ejection outlets but also protects electric contact 201. Reference character F designates a flexible cable for the electric wiring and is connected with the electric contacts 2001 of a connector projection 4003 of the head carriage Hc. The opening 1701 of the recording head has a size enough to accommodate the projection 4003 (a×b). The opening 1700 in the top of the head is smaller than it. Therefore, it is preferable to protect the opening 1701 by the seal.

The ink jet cartridge IJC is mounted to the printer carriage Hc, so that the connector projection 4003 is inserted through the opening 1701. At this time, the opening 1701 is provided with the protection tape 3 which is the same as the tape protecting the ejection outlets. (Col. 15, lines 28-42; emphasis added)

Thus, Karita merely seals the opening of a cable socket with protection tape; Karita does not seal the electric contacts 2001 with sealing tape. Carlotta does not teach or suggest anything about sealing electric contacts or leads. Since neither Karita nor Carlotta teaches or suggests sealing electric contacts or leads, the combination of Karita and Carlotta hardly would teach or suggest such a feature to one having ordinary skill in the art at the time of the invention.

For at least these additional reasons, the Examiner's rejection of dependent claims 4, 8, 14, and 17 under 35 U.S.C. § 103(a) over Carlotta in view of Karita should be withdrawn.

Independent claim 20 requires heat staking hot melt that is block coating a pouch material to nozzles of a print cartridge and flow wrapping the pouch material around the print cartridge. Neither Carlotta nor Karita, taken alone or in any permissible combination, teaches or suggests such process steps. The Examiner has indicated that:

Karita et al. teaches a process of wrapping a seal sheet around a print cartridge.

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the device of Carlotta to wrap the laminated seal around the cartridge as taught by Karita et al. for the purpose of seal not only the nozzles but also the vent hole or the electric contacts.

In FIGS. 15A-15D, Karita shows a package for the recording head. However, Karita's package is not flow wrapped around the recording head. In addition, Karita's package is not heat staked to the recording head. Since neither Carlotta nor Karita teaches or suggests heat staking hot melt that is block coating a pouch material to nozzles of a print cartridge and flow wrapping the pouch material around the print cartridge, the combination of Carlotta and Karita hardly would teach or suggest such process steps to one having ordinary skill in the art at the time of the invention.

Dependent claim 21 incorporates the features of independent claim 20 and therefore is patentable for at least the same reasons.

For at least these reasons, the Examiner's rejection of claims 20 and 21 under 35 U.S.C. § 103(a) over Carlotta in view of Karita should be withdrawn